



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

4601 N. Monroe Street • Spokane, Washington 99205-1295 • (509) 456-2926

March 21, 2002

Wallula Generation, L.L.C.
100 Bayview Circle, Suite 500
Newport Beach, California 92660

Dear Sir or Madam:

Re: Applications for Change/Transfer under Ground Water Certificate No.'s
G3-28146C, G3-28683C, G3-24791C, G3-21039C, G3-21038C, G3-21036C, G3-21037C
WRIA 32 – Walla Walla County

Enclosed please find revised copies of the Department of Ecology's Reports of Examination for your transmittal to the Energy Facility Site Evaluation Council (EFSEC). These reports constitute our determinations and findings regarding the above referenced applications for change.

Under the development schedule contained in the Reports, construction work for your project shall be completed by October 1, 2004. This construction schedule is recommended within the reports.

Under a separate cover, we will transmit these decisions to EFSEC for their consideration in your licensing process. This action completes the requirements under the agreement between the Department of Ecology and Walulla Generation LLC instrumented August 17th and 20th, 2001.

If you have any questions concerning these reports, please contact Bill Neve at (509) 527-4546.

Sincerely,

George B. Schlender
Section Manager
Water Resources Program

GBS:kay

w:ROE/Neve/2002/Wallula Gen-Boise ROE revised cvr 3-20-2002.doc

Enclosures

IN RE APPLICATION NO. 2001-01 EXHIBIT _____ (SAN-3)
WALLULA POWER PROJECT SCOTT A. NOLL

REPORT OF EXAMINATION
For State of Washington Energy Facility Site Evaluation Council (EFSEC)
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- ☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- ☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE February 18, 1976	APPLICATION NUMBER G3-24791	PERMIT NUMBER G3-24791P	CERTIFICATE NUMBER G3-24791C
NAME WALLULA GENERATION, L.L.C.			
ADDRESS (STREET) (CITY) (STATE) (ZIP CODE) 100 Bayview Circle, Suite 500 Newport Beach California 92660			

PUBLIC WATERS TO BE APPROPRIATED		
SOURCE Wells (10)		
TRIBUTARY OF (IF SURFACE WATERS)		
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 310	MAXIMUM ACRE FEET PER YEAR 300
QUANTITY, TYPE OF USE, PERIOD OF USE		

LOCATION OF DIVERSION/WITHDRAWAL	
APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL #1 - 80 feet north and 80 feet east; #2 - 525 feet north and 80 feet east; #3 - 650 feet north and 80 feet east; #4 - 700 feet north and 250 feet east; #5 - 80 feet north and 280 feet east; # 1-5 ALL from the SW corner of Sec. 11	#6 - 1200 feet north and 1400 feet east; #7 - 30 feet north and 300 feet east; #8 - 1300 feet south and 1300 feet east; #9 - 2500 feet south and 500 feet east; #10 - 2350 feet south and 1820 feet east; #6-10 ALL from the center of Sec. 14

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION 11 & 14	TOWNSHIP N. 7	RANGE (E OR W) W.M. 31 E	W.R.L.A. 32	COUNTY Walla Walla
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RECORDED PLATTED PROPERTY		
LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

That portion of Tracts 37 through 44, inclusively, and tracts 53 through 60, inclusively, all of the plat known as the Pasco Plats, Page 8, records of Walla Walla County, all lying in Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of Tracts 65, 80, 81, 96, 97, 112, and 113 of the plat known as Attalia Five Acre Tracts, according to the official plat thereof, lying Easterly of the Easterly right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of definite location now of record and on file in the office of the Director of Highways at Olympia Washington; and more particularly being described as that portion of the Southwest quarter of Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of the East half of the East half of the southeast quarter of Section 33, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington, described as follows:

Commencing at a found 2-inch brass cap monument marking the southwest corner of said Section 34; thence North 88°47'18" East, coincident with the South boundary line of the Southwest quarter of said Section 34, a distance of 165.12 feet to the northeast right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of a definite location now of record and on file in the office of the Director of Highways at Olympia, Washington, and to the Point of Beginning; thence northwesterly on the following two courses coincidental with the northeasterly right of way boundary line of said State Highway #3:

1. northwesterly on a non-tangent 11,385.00-foot radius curve concave to the northeast through a central angle of 9°16'13" to the right, the long chord of said curve being North 18°05'12" West a distance of 1,840.02 feet;
2. North 13°27'06" West a distance of 899.97 feet to the north boundary line of the Northeast quarter of said Section 33;

Thence North 89°32'11" East, coincident with the north boundary line of the Northeast quarter of said Section 33, a distance of 586.12 feet to the Northwest corner of the Southwest quarter of said Section 34; thence North 88°43'39" East, coincident with the north boundary line of the Southwest quarter of said Section 34, a distance of 2708.74 feet to the northwest right of way boundary line of the Union Pacific Railroad; thence South 01°48'07" West, coincident with the northwest right of way boundary line of said Railroad, a distance of 2636.48 feet to the South boundary line of the Southwest quarter of said Section 34, said point bears South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 47.07 feet from a found 2-inch U.S. Bureau of Reclamation brass cap marking the Southeast corner of the Southwest quarter of said Section 34; thence South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 2431.87 feet to the Point of Beginning.;

Containing 175.529 Acres, more or less.

DESCRIPTION OF PROPOSED WORKS

DEVELOPMENT SCHEDULE		
BEGIN PROJECT BY THIS DATE Started	COMPLETE PROJECT BY THIS DATE October 1, 2004	WATER PUT TO FULL USE BY THIS DATE October 1, 2005

REPORT

BACKGROUND

Purpose

Wallula Generation, L.L.C. ("WallulaGen") is proposing to construct and operate a natural gas combined cycle electrical generating facility of approximately 1,300 MW at Wallula, Washington. As part of the development of this project, WallulaGen is seeking to transfer water rights from other uses for the purpose of operating the proposed power plant. The proposed changes include changing the points of withdrawal (consolidated of the existing wells), changing the place of use, and changing the purpose of use to the following water rights: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-21039C, G3-21936C, G3-24791C, G3-28146C and G3-28683C. The purpose of this report is to review the proposed changes to these, and to provide a tentative determination as to the extent of water available for such transfer.

Expedited Processing

In August of 2001, WallulaGen entered into a contract with Ecology to pay \$344,200.00 for the purchase of water rights on the lower Walla Walla River. This purchase completed a contract Ecology had entered into earlier with a private landowner to purchase water rights appurtenant to 659 acres located along the lower reach of the Walla Walla River. The water rights purchased are in the process of being placed in the Trust Water Right Program for the purpose of instream flow. The WallulaGen portion of this purchase will result in instream flow augmentation to the Walla Walla River in the amount of approximately 2.8 cubic feet per second from April 1 to July 1.

As part of this contract with WallulaGen, Ecology agreed to provide a tentative determination as to the extent of water available for the proposed transfer, and to write a report outlining those findings. It is the intent of WallulaGen to submit said report to Energy Facility Siting Evaluation Committee ("EFSEC") as part of their effort to license the proposed power plant. (Under Washington State law, EFSEC is responsible for siting and licensing the construction and operation of major energy facilities in Washington State, including this project). Due to the fact WallulaGen's purchase is considered by Ecology to be a significant environmental benefit, Ecology agreed to complete this report on an expedited basis - no later than December 31, 2001, if possible.

INVESTIGATION

Project Description

The proposed project site is located primarily within the SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M. This site is 3.5 miles north of Wallula, Washington, due west of the I.B.P. Inc. processing plant, and on the east side of SR 12. The 183 acre site is zoned Heavy Industrial and is presently in agricultural use. WallulaGen has indicated their desire to change the place of use, purpose of use, add points of withdrawal (consolidation), and season of use to the following water rights to allow for their use in the operation of the proposed power plant: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-21039C, G3-21936C, G3-24791C, G3-28146C and G3-28683C.

Existing Water Rights/Claims

There are two water rights appurtenant the proposed WallulaGen project site: Ground Water Permit No. G3-29640P and Surface Water Right No. 10703.

Ground Water Permit No. G3-29640P

Priority date: February 16, 1994
Qi (instantaneous): 1,200 gallons per minute
Qa (annual): 1,800 acre-feet per year
Purpose: Industrial use
Season: Continuous
Source: A well (basalt aquifer)
Point of withdrawal: SE¼SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M.
Place of use: Within SE¼ of Sec. 33 and W¼ of Sec. 34, T. 8 N., R. 31 E.W.M.

This permit issued to the Port of Walla Walla on February 12, 1996. No beneficial use of water has been made under this permit to date, although the subject well has been completed. This permit is in good standing, and WallulaGen has indicated their intent to use water from this well to the full extent possible. In their EFSEC application, they indicate that this permit will be the initial source of water for the plant, with water needs over and above those allocated coming from other sources - primarily the shallow aquifer wells authorized through the water rights proposed for change herein.

Report Continued

There is a change application pending with Ecology for this Permit, filed by the Port of Walla Walla in December of 1996. This application requests authority to add an additional well to the one authorized, to serve as an emergency back-up source to the primary well.

Surface Water Right No. 10703

Priority date: October 27, 1958
 Qi (instantaneous): 80 cubic feet per second
 Qa (annual): 23,121 acre-feet per year
 Purpose: Irrigation of 3,303 acres
 Season: March 15 to October 31
 Source: Columbia River
 Point of withdrawal: NE¼SE¼ of Sec. 20, T. 8 N., R. 31 E.W.M.

This water right was issued to the U.S. Bureau of Reclamation, and is administered by the South Columbia Basin Irrigation District. This right has been used on the subject property in the past for irrigation of orchard and grain crops. The applicant has expressed the intent to continue to use at least a portion of their allocation of Surface Water Right No. 10703 for irrigation purposes. Any use of water under Certificate No. 10703 will be independent from the use of water proposed herein for industrial purposes.

Evaluation of Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C

In Okanogan Wilderness League v. Town of Twisp, 133 Wn.2d 769, 947 P.2d 732 (1997), the Supreme Court held that applications for change of water rights may be granted only to the extent the water has been historically put to beneficial use, as beneficial use determines the measure of a water right. The Court also held that (1) the existence and quantification of a water right must first be determined, and (2) that it then must be determined whether or not any perfected water right has been lost for nonuse due to statutory relinquishment or common law abandonment before the Department can approve a change or transfer. While Ecology is not considering a formal application for change in development of this report, the evaluation of these rights will be consistent with this court decision.

Below is a summary of the water rights proposed for change/transfer:

Certificate No.	Well No.	Priority Date	Qi (gpm)	Qa (afy)	Acres	Season of Use
G3-28146C ^{1,2}	1-5	2/27/86	5,000	2,790	600	3/1 - 11/30
G3-28683C ^{1,2}	1-5	11/2/89	2,500	883	190	3/1 - 11/30
G3-21038C	6	4/19/73	560	279	60	1/1 - 12/31
G3-24791C ³	7	2/18/76	650	623	124	1/1 - 12/31
G3-21037C	8	4/19/73	800	372	80	1/1 - 12/31
G3-21039C	9	4/19/73	1300	744	160	1/1 - 12/31
G3-21936C	10	10/12/73	530	293	63	1/1 - 12/31

¹Subject to the minimum flows set forth in the Columbia River Instream Protection Program (WAC 173-563-040 and WAC 173-563-050)

²Family Farm Development Certificate

³Of these totals, 340 gpm and 158 ac/ft for irrigation of 34 acres are supplemental to existing water rights (G3-21037C)

1. Historical Beneficial Use

Beneficial use encompasses two (2) principal elements of a water right: First it refers to the purposes for which water may be used; and second, beneficial use determines the measure of a water right. The measure of a water right refers to the quantities of water actually used, without waste, within the authorized place of use for the purpose(s) authorized. The measure is defined in terms of both annual quantity and instantaneous quantity. Prior to recommending any change to the subject water rights, it is necessary to determine the extent of beneficial use of water under these rights.

a. Purpose

The use authorized under Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C, irrigation, is explicitly identified in statute as being a beneficial use (RCW 90.54.020(1)).

b. Measure

In order to determine the amount of water available for the requested change, a determination must be made as to the quantities of water beneficially used to irrigate crops on the subject property. Alan Kottwitz, Irrigation Manager for Boise Cascade Fiber Farms, provided meter data for each of the past seven (7) years for all of the wells. These data are summarized below (Note: Water under Certificate No.'s G3-28146C and G3-28683C is withdrawn from five (5) integrated wells; likewise, water withdrawn from the two (2) wells authorized for use under Certificate No.'s G3-21039C and G3-21936C are also integrated. The use of water under these rights is summarized in cumulative form.)

Water	Well No.	Water	Metered	Metered	Metered	Metered	Metered	Metered	Metered
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Right No.'s		Right (Ac/ft/yr)	Use - 1995	Use - 1996	Use - 1997	Use - 1998	Use - 1999	Use - 2000	Use - 2001
G3-28146; G3-28683	1 - 5	3,673	3,038	N/A	2,489	3,073	3,302	3,156	3,163
G3-21038	6	279	142	N/A	170	204	225	87	237
G3-24791	7	465	176	N/A	241	313	316	116	290
G3-21037	8	372	89	N/A	111	121	136	56	160
G3-21039; G3-21936	9 - 10	1073	575	N/A	803	1065	1070	968	1105

¹Quantity represents primary right only

Note shaded areas represent the maximum year of metered use for each well respectively during the six (6) years of measurement provided.

It is noted that the instantaneous and annual quantities withdrawn in 2001 under Certificate No.'s G3-21039 and G3-21936C exceed those quantities authorized. The acres irrigated under these rights also exceed what is authorized; however, these additional acres are within the place of use of Certificate No. G3-21037C. When taken together, the quantities of water withdrawn and number of acres irrigated do not exceed those authorized through a combination of the three certificates. In essence, Well No.'s 9 and 10 were added as points of withdrawal to Certificate No. G3-21037C without authorization. All three (3) wells withdraw water from the same aquifer, and no real expansion of the rights in total quantities or acres occurred through this "defacto" change. This being the case, consideration can and will be given to the full quantities withdrawn under the various rights. The total gross quantity of water available for change is (3,302+237+316+160+1105) 5120 acre-feet.

One of the proposed changes to the subject rights is in purpose of use, from irrigation to industrial. A component of the irrigation use, return flows to the Columbia River in the form of deep percolation and surface runoff, would be eliminated if such a change were approved. In order to minimize any potential impairment to the Columbia River by virtue of this change, the estimated return flows should be subtracted from the total amount withdrawn.

Irrigation of hybrid poplars through the subject water rights occurs by means of drip irrigation system. Boise Cascade utilizes 9 neutron probes installed to a depth of 5 feet. The probes were reported to have been read weekly from mid-March to mid-October, with irrigation being managed according to the soil moisture readings. A well-managed drip system can run at a 90% application efficiency, with the 10% loss occurring through a variety of factors including evaporation, deep percolation, and surface runoff. A review of pertinent material in the Washington State Irrigation Guide, and discussions with Brian Leib, WSU Extension Irrigation Specialist, confirm that half of the efficiency loss, or 5%, is a reasonable estimate for deep percolation return flows for the irrigation system described.

A 5% return flow component would equate to 256 acre-ft. The resulting net annual quantity of water available for consideration for transfer is 4,864 acre-feet. The maximum projected annual water use at the WallulaGen plant is expected to be 6,591 acre-feet per year.

Boise Cascade reported cumulative instantaneous withdrawal rates totaling 9,735 gallons per minute from the subject wells. Due to a portion of Certificate No. G3-24791C being supplemental, a total of 9,671 gallons per minute is available for transfer. The total currently authorized is 11,000 gallons per minute. This compares with the projected maximum instantaneous water demand for the project of 7,901 gallons per minute reported in the WallulaGen EFSEC application.

c. Waste

As described above, Boise Cascade has employed a drip irrigation system in utilizing water under the subject rights. Assuming that the drip system was operated in a well-managed manner, this would be a relatively efficient irrigation application method, which would minimize any waste. Operational losses are part of any irrigation system; the losses estimated herein are within what would be necessary and expected.

Hybrid poplars are known to have transpiration rates that are among the highest of temperate deciduous trees. Generally, research suggests that hybrid poplars will "use" as much water as is made available to them; that is, if potential evapotranspiration of a certain quantity exists at a site and that quantity of water is made available to the tree, it will "use" that quantity. While there is no published crop irrigation requirement for hybrid poplars, a review of pertinent literature indicates that single, mature hybrid poplars trees are capable of consuming 7 acre-feet or more of water per year. Ideally the producer would attempt to match applied water to that used by the poplar stand for optimal production. The technology to assess the water use characteristics of a stand is generally not available, and is made more difficult by the fact that the water use will change considerably from early in the stand rotation to later years.

The annual application of water for the hybrid poplars grown on the subject lands, based on information supplied by Boise Cascade, averages 4.35 acre-feet per acre per year. It could be expected that poplars in the Wallula area, with its typically high summer temperatures and windy conditions, would exhibit a relatively high

Report Continued

evapotranspiration rate. Given the climate and soil type of the area in which this tree farm has been established, the annual quantity applied would appear to be reasonable for optimizing production without waste.

2. Relinquishment/Abandonment

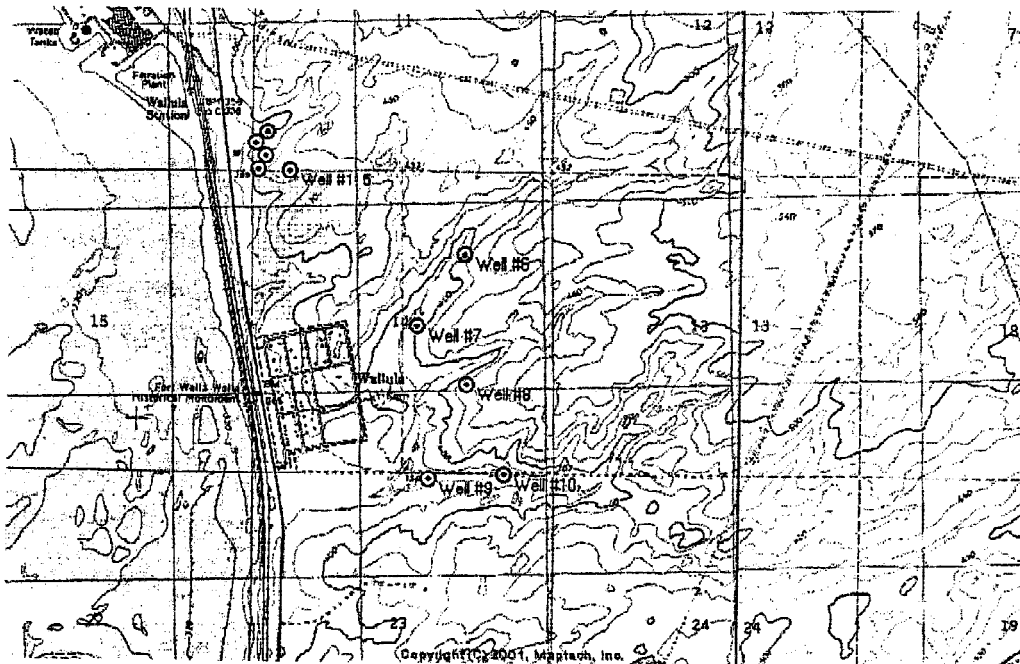
That difference between that amount of water available for the changes requested herein (4,864 acre-feet, 9,671 gallons per minute) and the amount of water authorized in total by the subject water rights (5,826 acre-feet, 11,000 gallons per minute), being 962 acre-feet and 1,329 gallons per minute, would be subject to relinquishment should the changes proposed herein be approved.

Assessment of the Proposed Changes

a. Points of Withdrawal

While no additional wells are proposed through changes to the subject water rights, officials from WallulaGen have indicated a desire to consolidate the existing points of withdrawal under the subject water rights. This would enable WallulaGen to utilize more fully and efficiently the existing higher capacity wells, while maintaining the lower capacity wells as backup or reserve supply for use as needed.

All the subject wells have been completed in the upper alluvial aquifer (see table below). Wells in this area generally range in depth from 50 to 150 feet. The specific capacity of the wells range from 30 to 100 gallons per minute per foot of drawdown. There are two (2) wells located approximately 1.25 miles south of the subject wells. These wells were drilled in 1984, and test pumped and developed at variable withdrawal rates which ranged from 1,000 to 2,000 gallons per minute. These tests indicated that the specific capacity of the wells was related to the types of material in the immediate vicinity of the wells as these materials dictated the size of the screen and therefore the ability of the wells to produce water.



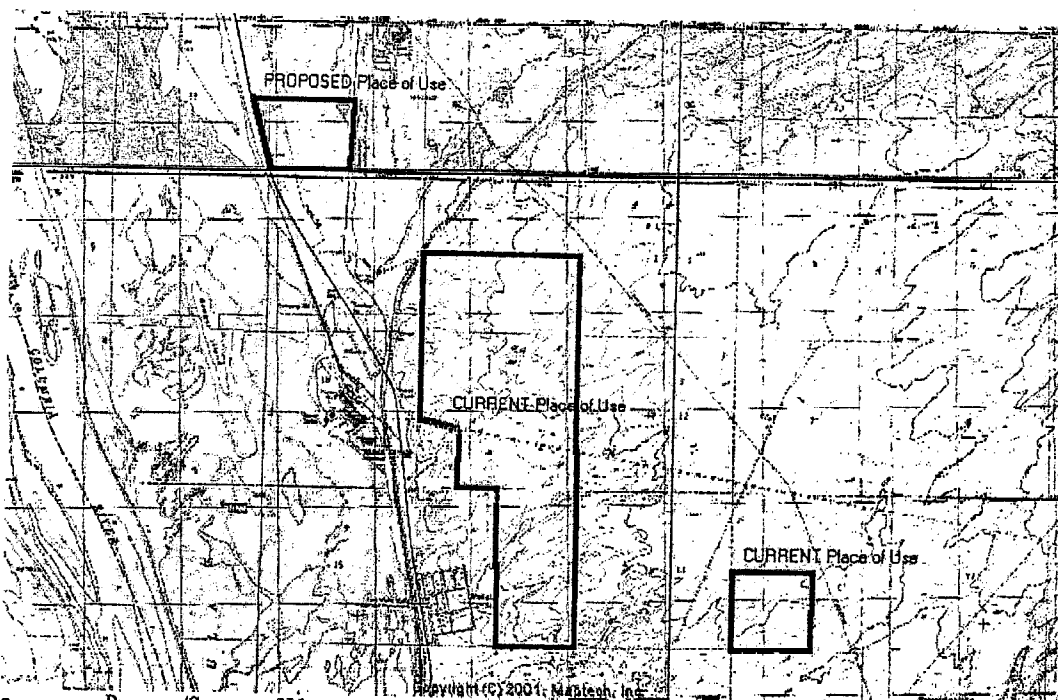
Well No.	Completed Depth (in feet)	Pumping Level * (in feet)	Surface Elevation * (in feet asl)
1	100	95	400
2	99	92	395
3	91	74	380
4	104	75	380
5	135	115	430
6	145	110	428
7	127	Unknown	405
8	150	125	418
9	118	85	387
10	106	70	385

*Estimates supplied by Boise Cascade Fiber Farm

Boise Cascade's "operational use rate" (well yield) for the existing ten wells has been reported as 9,735 gpm during the irrigation season (EFSEC Application - Table 3.3.5.4.1-2). Pumping at up to this rate, they produce approximately 5,000 acre-feet during the irrigation season. The highest demand water month for the WallulaGen power plant, once it is operational, will be July with an estimated average total withdrawal rate for these ten wells of 4,104 gpm (EFSEC Application - Table 3.3.5.4.1-4). Consolidating the existing points of withdrawal under the subject water rights to utilize more fully and efficiently the existing higher capacity wells will not lead to impairment of any of the nearby, existing water rights. Well interference problems caused by the combined withdrawals of any combination of these existing wells under the power plant operations scenario will be less than the well interference problems that arise under the current pumping scenario.

b. Place of Use

The proposed place of use for these rights is located on an industrial site owned by the Port of Walla Walla. This site is approximately two (2) miles north of the existing place of use. Through this change the poplar plantation currently irrigated through authority of these rights would no longer be irrigated.



c. Purpose/Season of Use

Certificate No.'s G3-28146C and G3-28683C authorize the withdrawal and use of water from March 1 to November 1, while Certificate No.'s G3-21038C, G3-24791C, G3-21037C, G3-21039C and G3-21936C all authorized withdrawal from January 1 to December 31. Use of water under each of these rights has historically occurred during the period of March to November, thereby establishing the season of use for these rights. WallulaGen had requested that the season/purpose of use be expanded from seasonal irrigation to continuous industrial supply.

By increasing the period of use to include December, January and February, a determination as to the potential impacts to existing water rights must be made. Consultants hired by WallulaGen to evaluate these impacts constructed a MODFLOW computer model for the gravel aquifer in the project area. Output from the simulation of the proposed future use (year-round) of the Boise Cascade Corporation fiber farm wells was compared to output from the simulation of the current conditions to identify power plant operation effects. Their results indicate that the annual fluctuation of water levels in the gravel aquifer due to relatively stable year-round pumping (for power plant operations) versus the highly seasonal pumping (for irrigation) will be reduced under the proposed future use. Water levels in December through May are predicted to be lower under future conditions while water levels in June through November are predicted to be higher. The magnitude of the changes are quite small (± 2 feet) except very close to the Boise Cascade Well field (Wells 1 to 5) which will experience slightly larger changes. Existing gravel aquifer wells should not be impaired by the change in the pattern of pumping at the Boise Cascade fiber farm wells because future water level fluctuations should be less than current fluctuations. Also, maximum water use by existing water users typically occurs during the summer months when water levels under future conditions should be higher than historical levels.

It should be noted that both Ground Water Certificate No.'s G3-28146C and G3-28683C were issued subject to the Columbia River Instream Protection Program (CRIPP - WAC 173-563) which specifies minimum flows in the

Report Continued

Columbia River which must be met prior to withdrawal of water under these permits. Curtailment of pumping under this regulation can be expected at least once every 20 years, and occurred most recently during the 2001 irrigation season. These provisions would remain with the certificates through approval of any change in season of use.

d. Family Farm Development Permits

Ground Water Certificate No.'s G3-28146C and G3-28683C were issued as Family Farm Development Permits. These types of permits are defined through RCW 90.66.050(2) as follows:

"Such permits may be issued to persons without any limit on the number of acres to be irrigated during a specified period of time permitted for the development of such land into family farms and the transfer of the controlling interest of such irrigate lands to persons qualifying for family farm permits. The initial period of time allowed for development and transfer of such lands to family farm status shall not exceed an additional ten years upon a showing to the department that an additional period of time is needed for the orderly development and transfer of controlling interests to persons who can qualify for family farm permits."

These two (2) permits were issued in 1986 and 1990, respectively, and are currently into the 2nd 10 year extension period allowed to develop and transfer to entities which qualify for Family Farm Permits. WallulaGen is an entity which would qualify for Family Farm Permit status, and has stated their intent to request conversion of these permits to Family Farm status once their purchase option is executed.

Recent legislative changes to Chapter 90.66 allow for changes in purpose of use to Family Farm Permits under certain circumstances. The purpose of use of these Family Farm Permits may change from irrigation to industrial use, if 1). The water right is for the use of water at a location that is, at the time the transfer is approved, within the boundaries of an urban growth area designated under chapter 36.70A RCW {RCW 90.66.065(2) (c)}, and 2). The place of use for the right to be transferred remains within the water resource inventory area containing the place of use for the water right before the transfer {RCW 90.66.065(5)}.

The subject rights meet both of these criteria. The proposed place of use is within the Attalia Industrial Urban Growth Area, an industrial growth area established under the 2001 Walla Walla County Comprehensive Plan. Both the proposed and existing places of use for these rights are within the WRIA 32, Walla Walla River Basin.

Provided that the above-described transaction is completed and controlling interest of these rights accrue to WallulaGen, these rights should be able to be transferred to Family Farms Permits, and subsequently the change in purpose of use for irrigation to industrial supply could be approved.

FINDINGS

Validity/Extent of Water Rights:

The extent and validity of Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C, has been tentatively determined to equal 9671 gallons per minute, 4,864 acre-feet per year. The difference between these quantities and that authorized through the subject water rights, 962 acre-feet and 1,329 gallons per minute, are subject to relinquishment.

No Impairment to Existing Rights:

There would be no impairment to existing rights through implementation of the proposed changes, provided that the CRIPP low flow provisions conditioned to Ground Water Certificate No.'s G3-28146C and G3-28683C are carried over and adhered to.

No Detriment to the Public Welfare:

Provided that the transition from Family Farm Development Permits to Family Farm Permits to industrial use is pursued and completed as proposed, the proposed changes will not prove detrimental to the public interest/welfare.

No Enhancement of the Original Certificate:

The quantities of water determined to be available for the proposed changes are those quantities determined to have been put to historical beneficial use. The season of use for these rights will expand, but the potential for impairment to existing rights or instream flows should actually be reduced by expanding the season of use into the winter months. Approving the proposed changes for the 4,864 acre-feet considered herein will not result in an enhancement of the original certificate.

Same Source of Water:

The source of groundwater for the subject water rights will not change as a result of the proposed changes.

CONCLUSIONS AND RECOMMENDATIONS

The above discussion concludes that the proposed changes in place of use, purpose of use, and points of withdrawal to Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and

G3-28683C will not impair existing rights, will not be detrimental to the public welfare, and will not enhance the original certificates. The proposed changes to Ground Water Certificate No. G3-24791C should be approved, in the amount of 310 gallons per minute, 300 acre-feet per year, continuously, for industrial supply, subject to the following provisions:

"Upon completion of the project, a superceding certificate shall issue only for those quantities of water beneficially used for the purpose authorized."

"The combined withdrawal under Ground Water Certificate No.'s G3-21936C, G3-21037C, G3-21038C, G3-20139C, G3-24791C, G3-28146C and G3-28683C shall not exceed 9,671 gallons per minute, 4,864 acre-feet per year, for continuous industrial supply."

"The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required."

The water source and/or water transmission facilities are not wholly located upon the land owned by the applicant. Issuance of a permit by this Department for appropriation of the waters in question does not convey a right of access to, or other right to use, land which the applicant does not legally possess. Obtainment of such right is a private matter between applicant and owner of that land.

"This authorization to make use of public waters of the State is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise."

"All water wells constructed within the State shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

An approved measuring device shall be installed and maintained for each of the sources identified herein in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. Water use data shall be recorded weekly and shall be submitted annually to Ecology by January 31st of each calendar year.

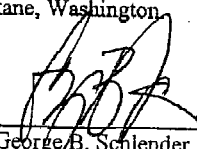
The rule above describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements."

At a minimum, the following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit or Certificate #, source name, annual quantity used including units, maximum rate of diversion including units, and period of use. In the future, Ecology may require additional parameters to be reported or more frequent reporting.

Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information by December 31, 2002.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

DATED this 21st day of March, 2002 in Spokane, Washington.


George B. Schlender
Section Manager, Water Resources Program
Department of Ecology - Eastern Regional Office

GBS:BN:kay

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REPORT OF EXAMINATION
For State of Washington Energy Facility Site Evaluation Council (EFSEC)
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- ☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- ☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE February 27, 1986	APPLICATION NUMBER G3-28146	PERMIT NUMBER G3-28146P	CERTIFICATE NUMBER G3-28146C
NAME WALLULA GENERATION, L.L.C.			
ADDRESS (STREET) 100 Bayview Circle, Suite 500		(CITY) Newport Beach	(STATE) California
		(ZIP CODE) 92660	

PUBLIC WATERS TO BE APPROPRIATED		
SOURCE Wells (10)		
TRIBUTARY OF (IF SURFACE WATERS)		
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 5,000	MAXIMUM ACRE FEET PER YEAR 2,651
QUANTITY, TYPE OF USE, PERIOD OF USE		

LOCATION OF DIVERSION/WITHDRAWAL	
APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL #1 - 80 feet north and 80 feet east; #2 - 525 feet north and 80 feet east; #3 - 650 feet north and 80 feet east; #4 - 700 feet north and 250 feet east; #5 - 80 feet north and 280 feet east; #1-5 ALL from the SW corner of Sec. 11	#6 - 1200 feet north and 1400 feet east; #7 - 30 feet north and 300 feet east; #8 - 1300 feet south and 1300 feet east; #9 - 2500 feet south and 500 feet east; #10 - 2350 feet south and 1820 feet east; #6-10 ALL from the center of Sec. 14

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N	RANGE, (E OR W), W.M.	W.R.I.A.	COUNTY
	11 & 14	7	31 E	32	Walla Walla

RECORDED PLATTED PROPERTY		
LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

That portion of Tracts 37 through 44, inclusively, and tracts 53 through 60, inclusively, all of the plat known as the Pasco Plats, Page 8, records of Walla Walla County, all lying in Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of Tracts 65, 80, 81, 96, 97, 112, and 113 of the plat known as Attalia Five Acre Tracts, according to the official plat thereof, lying Easterly of the Easterly right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of definite location now of record and on file in the office of the Director of Highways at Olympia Washington; and more particularly being described as that portion of the Southwest quarter of Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of the East half of the East half of the southeast quarter of Section 33, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington, described as follows:

Commencing at a found 2-inch brass cap monument marking the southwest corner of said Section 34; thence North 88°47'18" East, coincident with the South boundary line of the Southwest quarter of said Section 34, a distance of 165.12 feet to the northeast right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of a definite location now of record and on file in the office of the Director of Highways at Olympia, Washington, and to the Point of Beginning; thence northwesterly on the following two courses coincidental with the northeasterly right of way boundary line of said State Highway #3:

1. northwesterly on a non-tangent 11,385.00-foot radius curve concave to the northeast through a central angle of 9°16'13" to the right, the long chord of said curve being North 18°05'12" West a distance of 1,840.02 feet;
2. North 13°27'06" West a distance of 899.97 feet to the north boundary line of the Northeast quarter of said Section 33;

Thence North 89°32'11" East, coincident with the north boundary line of the Northeast quarter of said Section 33, a distance of 586.12 feet to the Northwest corner of the Southwest quarter of said Section 34; thence North 88°43'39" East, coincident with the north boundary line of the Southwest quarter of said Section 34, a distance of 2708.74 feet to the northwest right of way boundary line of the Union Pacific Railroad; thence South 01°48'07" West, coincident with the northwest right of way boundary line of said Railroad, a distance of 2636.48 feet to the South boundary line of the Southwest quarter of said Section 34, said point bears South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 47.07 feet from a found 2-inch U.S. Bureau of Reclamation brass cap marking the Southeast corner of the Southwest quarter of said Section 34; thence South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 2431.87 feet to the Point of Beginning;

Containing 175.529 Acres, more or less.

DESCRIPTION OF PROPOSED WORKS		
DEVELOPMENT SCHEDULE		
BEGIN PROJECT BY THIS DATE Started	COMPLETE PROJECT BY THIS DATE October 1, 2004	WATER PUT TO FULL USE BY THIS DATE October 1, 2005
REPORT		

BACKGROUND

Purpose

Wallula Generation, L.L.C. ("WallulaGen") is proposing to construct and operate a natural gas combined cycle electrical generating facility of approximately 1,300 MW at Wallula, Washington. As part of the development of this project, WallulaGen is seeking to transfer water rights from other uses for the purpose of operating the proposed power plant. The proposed changes include changing the points of withdrawal (consolidation of the existing wells), changing the place of use, and changing the purpose of use to the following water rights: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C. The purpose of this report is to review the proposed changes to these, and to provide a tentative determination as to the extent of water available for such transfer.

Expedited Processing

In August of 2001, WallulaGen entered into a contract with Ecology to pay \$344,200.00 for the purchase of water rights on the lower Walla Walla River. This purchase completed a contract Ecology had entered into earlier with a private landowner to purchase water rights appurtenant to 659 acres located along the lower reach of the Walla Walla River. The water rights purchased are in the process of being placed in the Trust Water Right Program for the purpose of instream flow. The WallulaGen portion of this purchase will result in instream flow augmentation to the Walla Walla River in the amount of approximately 2.8 cubic feet per second from April 1 to July 1.

As part of this contract with WallulaGen, Ecology agreed to provide a tentative determination as to the extent of water available for the proposed transfer, and to write a report outlining those findings. It is the intent of WallulaGen to submit said report to Energy Facility Siting Evaluation Committee ("EFSEC") as part of their effort to license the proposed power plant. (Under Washington State law, EFSEC is responsible for siting and licensing the construction and operation of major energy facilities in Washington State, including this project). Due to the fact WallulaGen's purchase is considered by Ecology to be a significant environmental benefit, Ecology agreed to complete this report on an expedited basis - no later than December 31, 2001, if possible.

INVESTIGATION

Project Description

The proposed project site is located primarily within the SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M. This site is 3.5 miles north of Wallula, Washington, due west of the I.B.P. Inc. processing plant, and on the east side of SR 12. The 183 acre site is zoned Heavy Industrial and is presently in agricultural use. WallulaGen has indicated their desire to change the place of use, purpose of use, add points of withdrawal (consolidation), and season of use to the following water rights to allow for their use in the operation of the proposed power plant: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C.

Existing Water Rights/Claims

There are two water rights appurtenant the proposed WallulaGen project site: Ground Water Permit No. G3-29640P and Surface Water Right No. 10703.

Ground Water Permit No. G3-29640P

Priority date:	February 16, 1994
Q1 (instantaneous):	1,200 gallons per minute
Qa (annual):	1,800 acre-feet per year
Purpose:	Industrial use
Season:	Continuous
Source:	A well (basalt aquifer)
Point of withdrawal:	SE¼SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M.
Place of use:	Within SE¼ of Sec. 33 and W¼ of Sec. 34, T. 8 N., R. 31 E.W.M.

This permit issued to the Port of Walla Walla on February 12, 1996. No beneficial use of water has been made under this permit to date, although the subject well has been completed. This permit is in good standing, and WallulaGen has indicated their intent to use water from this well to the full extent possible. In their EFSEC application, they indicate that this permit will be the initial source of water for the plant, with water needs over and above those allocated coming from other sources - primarily the shallow aquifer wells authorized through the water rights proposed for change herein.

there is a change application pending with ecology for this permit, filed by the Port of Walla Walla in December of 1996. This application requests authority to add an additional well to the one authorized, to serve as an emergency back-up source to the primary well.

Surface Water Right No. 10703

Priority date: October 27, 1958
 Qi (instantaneous): 80 cubic feet per second
 Qa (annual): 23,121 acre-feet per year
 Purpose: Irrigation of 3,303 acres
 Season: March 15 to October 31
 Source: Columbia River
 Point of withdrawal: NE¼SE¼ of Sec. 20, T. 8 N., R. 31 E.W.M.

This water right was issued to the U.S. Bureau of Reclamation, and is administered by the South Columbia Basin Irrigation District. This right has been used on the subject property in the past for irrigation of orchard and grain crops. The applicant has expressed the intent to continue to use at least a portion of their allocation of Surface Water Right No. 10703 for irrigation purposes. Any use of water under Certificate No. 10703 will be independent from the use of water proposed herein for industrial purposes.

Evaluation of Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C

In Okanogan Wilderness League v. Town of Twisp, 133 Wn.2d 769, 947 P.2d 732 (1997), the Supreme Court held that applications for change of water rights may be granted only to the extent the water has been historically put to beneficial use, as beneficial use determines the measure of a water right. The Court also held that (1) the existence and quantification of a water right must first be determined, and (2) that it then must be determined whether or not any perfected water right has been lost for nonuse due to statutory relinquishment or common law abandonment before the Department can approve a change or transfer. While Ecology is not considering a formal application for change in development of this report, the evaluation of these rights will be consistent with this court decision.

Below is a summary of the water rights proposed for change/transfer:

Certificate No.	Well No.	Priority Date	Qi (gpm)	Qa (afy)	Acres	Season of Use
G3-28146C ^{1,2}	1-5	2/27/86	5,000	2,790	600	3/1 - 11/30
G3-28683C ^{1,2}	1-5	11/2/89	2,500	883	190	3/1 - 11/30
G3-21038C	6	4/19/73	560	279	60	1/1 - 12/31
G3-24791C ³	7	2/18/76	650	623	124	1/1 - 12/31
G3-21037C	8	4/19/73	800	372	80	1/1 - 12/31
G3-21039C	9	4/19/73	1300	744	160	1/1 - 12/31
G3-21936C	10	10/12/73	530	293	63	1/1 - 12/31

¹Subject to the minimum flows set forth in the Columbia River Instream Protection Program (WAC 173-563-040 and WAC 173-563-050)

²Family Farm Development Certificate

³Of these totals, 340 gpm and 158 ac/ft for irrigation of 34 acres are supplemental to existing water rights (G3-21037C)

1. Historical Beneficial Use

Beneficial use encompasses two (2) principal elements of a water right: First it refers to the purposes for which water may be used; and second, beneficial use determines the measure of a water right. The measure of a water right refers to the quantities of water actually used, without waste, within the authorized place of use for the purpose(s) authorized. The measure is defined in terms of both annual quantity and instantaneous quantity. Prior to recommending any change to the subject water rights, it is necessary to determine the extent of beneficial use of water under these rights.

a. Purpose

The use authorized under Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C, irrigation, is explicitly identified in statute as being a beneficial use (RCW 90.54.020(1)).

b. Measure

In order to determine the amount of water available for the requested change, a determination must be made as to the quantities of water beneficially used to irrigate crops on the subject property. Alan Kottwitz, Irrigation Manager for Boise Cascade Fiber Farms, provided meter data for each of the past seven (7) years for all of the wells. These data are summarized below (Note: Water under Certificate No.'s G3-28146C and G3-28683C is withdrawn from five (5) integrated wells; likewise, water withdrawn from the two (2) wells authorized for use under Certificate No.'s G3-21039C and G3-21936C are also integrated. The use of water under these rights is summarized in cumulative form.)

Right No.'s		Right (Ac/ft/yr)	Use - 1995	Use - 1996	Use - 1997	Use - 1998	Use - 1999	Use - 2000	Use - 2001
G3-28146, G3-28683	1 - 5	3,673	3,038	N/A	2,489	3,073	3,302	3,156	3,163
G3-21038	6	279	142	N/A	170	204	225	87	237
G3-24791	7	465 ¹	176	N/A	241	313	316	116	290
G3-21037	8	372	89	N/A	111	121	136	56	160
G3-21039; G3-21936	9 - 10	1073	575	N/A	803	1065	1070	968	1,105

¹Quantity represents primary right only

Note shaded areas represent the maximum year of metered use for each well respectively during the six (6) years of measurement provided.

It is noted that the instantaneous and annual quantities withdrawn in 2001 under Certificate No.'s G3-21039 and G3-21936C exceed those quantities authorized. The acres irrigated under these rights also exceed what is authorized; however, these additional acres are within the place of use of Certificate No. G3-21037C. When taken together, the quantities of water withdrawn and number of acres irrigated do not exceed those authorized through a combination of the three certificates. In essence, Well No.'s 9 and 10 were added as points of withdrawal to Certificate No. G3-21037C without authorization. All three (3) wells withdraw water from the same aquifer, and no real expansion of the rights in total quantities or acres occurred through this "defacto" change. This being the case, consideration can and will be given to the full quantities withdrawn under the various rights. The total gross quantity of water available for change is (3,302+237+316+160+1,105) 5120 acre-feet.

One of the proposed changes to the subject rights is in purpose of use, from irrigation to industrial. A component of the irrigation use, return flows to the Columbia River in the form of deep percolation and surface runoff, would be eliminated if such a change were approved. In order to minimize any potential impairment to the Columbia River by virtue of this change, the estimated return flows should be subtracted from the total amount withdrawn.

Irrigation of hybrid poplars through the subject water rights occurs by means of drip irrigation system. Boise Cascade utilizes 9 neutron probes installed to a depth of 5 feet. The probes were reported to have been read weekly from mid-March to mid-October, with irrigation being managed according to the soil moisture readings. A well-managed drip system can run at a 90% application efficiency, with the 10% loss occurring through a variety of factors including evaporation, deep percolation, and surface runoff. A review of pertinent material in the Washington State Irrigation Guide, and discussions with Brian Leib, WSU Extension Irrigation Specialist, confirm that half of the efficiency loss, or 5%, is a reasonable estimate for deep percolation return flows for the irrigation system described.

A 5% return flow component would equate to 256 acre-ft. The resulting net annual quantity of water available for consideration for transfer is 4,864 acre-feet. The maximum projected annual water use at the WallulaGen plant is expected to be 6,591 acre-feet per year.

Boise Cascade reported cumulative instantaneous withdrawal rates totaling 9,735 gallons per minute from the subject wells. Due to a portion of Certificate No. G3-24791C being supplemental, a total of 9,671 gallons per minute is available for transfer. The total currently authorized is 11,000 gallons per minute. This compares with the projected maximum instantaneous water demand for the project of 7,901 gallons per minute reported in the WallulaGen EFSEC application.

c. Waste

As described above, Boise Cascade has employed a drip irrigation system in utilizing water under the subject rights. Assuming that the drip system was operated in a well-managed manner, this would be a relatively efficient irrigation application method, which would minimize any waste. Operational losses are part of any irrigation system; the losses estimated herein are within what would be necessary and expected.

Hybrid poplars are known to have transpiration rates that are among the highest of temperate deciduous trees. Generally, research suggests that hybrid poplars will "use" as much water as is made available to them; that is, if potential evapotranspiration of a certain quantity exists at a site and that quantity of water is made available to the tree, it will "use" that quantity. While there is no published crop irrigation requirement for hybrid poplars, a review of pertinent literature indicates that single, mature hybrid poplars trees are capable of consuming 7 acre-feet or more of water per year. Ideally the producer would attempt to match applied water to that used by the poplar stand for optimal production. The technology to assess the water use characteristics of a stand is generally not available, and is made more difficult by the fact that the water use will change considerably from early in the stand rotation to later years.

The annual application of water for the hybrid poplars grown on the subject lands, based on information supplied by Boise Cascade, averages 4.35 acre-feet per acre per year. It could be expected that poplars in the Wallula area, with its typically high summer temperatures and windy conditions, would exhibit a relatively high evapotranspiration rate. Given the climate and soil type of the area in which this tree farm has been established, the annual quantity applied would appear to reasonable for optimizing production without waste.

REPORT OF EXAMINATION

4

No. G3-28146C

2. Relinquishment/Abandonment

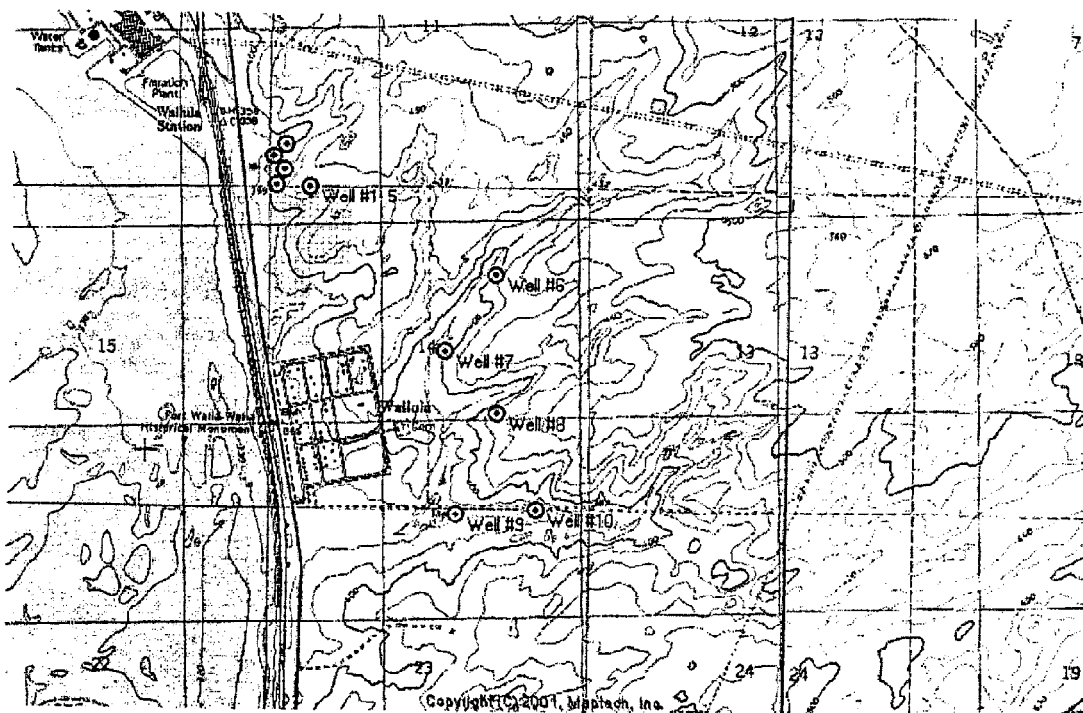
That difference between that amount of water available for the changes requested herein (4,864 acre-feet, 9,671 gallons per minute) and the amount of water authorized in total by the subject water rights (5,826 acre-feet, 11,000 gallons per minute), being 962 acre-feet and 1,329 gallons per minute, would be subject to relinquishment should the changes proposed herein be approved.

Assessment of the Proposed Changes

a. Points of Withdrawal

While no additional wells are proposed through changes to the subject water rights, officials from WallulaGen have indicated a desire to consolidate the existing points of withdrawal under the subject water rights. This would enable WallulaGen to utilize more fully and efficiently the existing higher capacity wells, while maintaining the lower capacity wells as backup or reserve supply for use as needed.

All the subject wells have been completed in the upper alluvial aquifer (see table below). Wells in this area generally range in depth from 50 to 150 feet. The specific capacity of the wells range from 30 to 100 gallons per minute per foot of drawdown. There are two (2) wells located approximately 1.25 miles south of the subject wells. These wells were drilled in 1984, and test pumped and developed at variable withdrawal rates which ranged from 1,000 to 2,000 gallons per minute. These tests indicated that the specific capacity of the wells was related to the types of material in the immediate vicinity of the wells as these materials dictated the size of the screen and therefore the ability of the wells to produce water.



Well No.	Completed Depth (in feet)	Pumping Level * (in feet)	Surface Elevation * (in feet asl)
1	100	95	400
2	99	92	395
3	91	74	380
4	104	75	380
5	135	115	430
6	145	110	428
7	127	Unknown	405
8	150	125	418
9	118	85	387
10	106	70	385

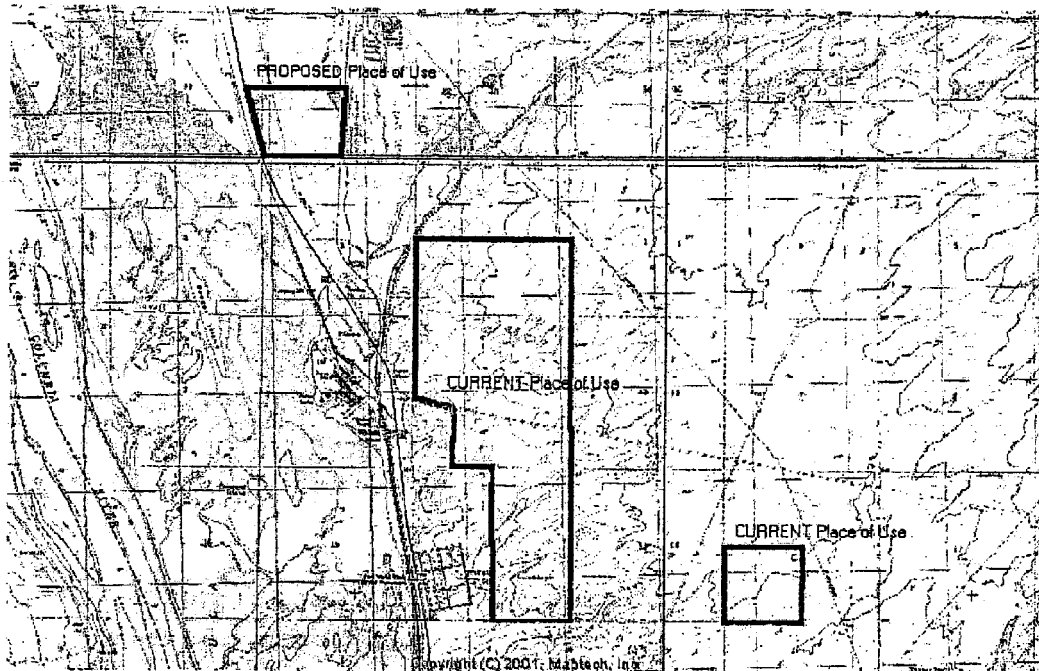
* Estimates supplied by Boise Cascade Fiber Farm

Boise Cascade's "operational use rate" (well yield) for the existing ten wells has been reported as 9,735 gpm during the irrigation season (EFSEC Application - Table 3.3.5.4.1-2). Pumping at up to this rate, they produce approximately 5,000 acre-feet during the irrigation season. The highest demand water month for the WallulaGen never plant, once it is operational, will be the month of June.

of 4,104 gpm (EFSEC Application - Table 3.3.5.4.1-4). Consolidating the existing points of withdrawal under the subject water rights to utilize more fully and efficiently the existing higher capacity wells will not lead to impairment of any of the nearby, existing water rights. Well interference problems caused by the combined withdrawals of any combination of these existing wells under the power plant operations scenario will be less than the well interference problems that arise under the current pumping scenario.

b. Place of Use

The proposed place of use for these rights is located on an industrial site owned by the Port of Walla Walla. This site is approximately two (2) miles north of the existing place of use. Through this change the poplar plantation currently irrigated through authority of these rights would no longer be irrigated.



c. Purpose/Season of Use

Certificate No.'s G3-28146C and G3-28683C authorize the withdrawal and use of water from March 1 to November 1, while Certificate No.'s G3-21038C, G3-24791C, G3-21037C, G3-21039C and G3-21936C all authorized withdrawal from January 1 to December 31. Use of water under each of these rights has historically occurred during the period of March to November, thereby establishing the season of use for these rights. WallulaGen had requested that the season/purpose of use be expanded from seasonal irrigation to continuous industrial supply.

By increasing the period of use to include December, January and February, a determination as to the potential impacts to existing water rights must be made. Consultants hired by WallulaGen to evaluate these impacts constructed a MODFLOW computer model for the gravel aquifer in the project area. Output from the simulation of the proposed future use (year-round) of the Boise Cascade Corporation fiber farm wells was compared to output from the simulation of the current conditions to identify power plant operation effects. Their results indicate that the annual fluctuation of water levels in the gravel aquifer due to relatively stable year-round pumping (for power plant operations) versus the highly seasonal pumping (for irrigation) will be reduced under the proposed future use. Water levels in December through May are predicted to be lower under future conditions while water levels in June through November are predicted to be higher. The magnitude of the changes are quite small (± 2 feet) except very close to the Boise Cascade Well field (Wells 1 to 5) which will experience slightly larger changes. Existing gravel aquifer wells should not be impaired by the change in the pattern of pumping at the Boise Cascade fiber farm wells because future water level fluctuations should be less than current fluctuations. Also, maximum water use by existing water users typically occurs during the summer months when water levels under future conditions should be higher than historical levels.

It should be noted that both Ground Water Certificate No.'s G3-28146C and G3-28683C were issued subject to the Columbia River Instream Protection Program (CRIPP - WAC 173-563) which specifies minimum flows in the Columbia River which must be met prior to withdrawal of water under these permits. Curtailment of pumping under this regulation can be expected at least once every 20 years, and occurred most recently during the 2001 irrigation season. These provisions would remain with the certificates through approval of any change in season of use.

d. Family Farm Development Permits

Ground Water Certificate No.'s G3-28146C and G3-28683C were issued as Family Farm Development Permits. These types of permits are defined through RCW 90.66.050(2) as follows:

"Such permits may be issued to persons without any limit on the number of acres to be irrigated during a specified period of time permitted for the development of such land into family farms and the transfer of the controlling interest of such irrigate lands to persons qualifying for family farm permits. The initial period of time allowed for development and transfer of such lands to family farm status shall not exceed an additional ten years upon a showing to the department that an additional period of time is needed for the orderly development and transfer of controlling interests to persons who can qualify for family farm permits."

These two permits were issued in 1986 and 1990, respectively, and are currently into the 2nd 10 year extension period allowed to develop and transfer to entities which qualify for Family Farm Permits. WallulaGen is an entity which would qualify for Family Farm Permit status, and has stated their intent to request conversion of these permits to Family Farm status once their purchase option is executed.

Recent legislative changes to Chapter 90.66 allow for changes in purpose of use to Family Farm Permits under certain circumstances. The purpose of use of these Family Farm Permits may change from irrigation to industrial use, if 1). The water right is for the use of water at a location that is, at the time the transfer is approved, within the boundaries of an urban growth area designated under chapter 36.70A RCW (RCW 90.66.065(2) (c)), and 2). The place of use for the right to be transferred remains within the water resource inventory area containing the place of use for the water right before the transfer (RCW 90.66.065(5)).

The subject rights meet both of these criteria. The proposed place of use is within the Attalia Industrial Urban Growth Area, an industrial growth area established under the 2001 Walla Walla County Comprehensive Plan. Both the proposed and existing places of use for these rights are within the WRIA 32, Walla Walla River Basin.

Provided that the above-described transaction is completed and controlling interest of these rights accrue to WallulaGen, these rights should be able to be transferred to Family Farms Permits, and subsequently the change in purpose of use for irrigation to industrial supply could be approved.

FINDINGS

Validity/Extent of Water Rights:

The extent and validity of Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C, has been tentatively determined to equal 9,671 gallons per minute, 4,864 acre-feet per year. The difference between these quantities and that authorized through the subject water rights, 962 acre-feet and 1,329 gallons per minute, are subject to relinquishment.

No Impairment to Existing Rights:

There would be no impairment to existing rights through implementation of the proposed changes, provided that the CRIPP low flow provisions conditioned to Ground Water Certificate No.'s G3-28146C and G3-28683C are carried over and adhered to.

No Detriment to the Public Welfare:

Provided that the transition from Family Farm Development Permits to Family Farm Permits to industrial use is pursued and completed as proposed, the proposed changes will not prove detrimental to the public interest/welfare.

No Enhancement of the Original Certificate:

The quantities of water determined to be available for the proposed changes are those quantities determined to have been put to historical beneficial use. The season of use for these rights will expand, but the potential for impairment to existing rights or instream flows should actually be reduced by expanding the season of use into the winter months. Approving the proposed changes for the 4,864 acre-feet considered herein will not result in an enhancement of the original certificate.

Same Source of Water:

The source of groundwater for the subject water rights will not change as a result of the proposed changes.

CONCLUSIONS AND RECOMMENDATIONS

The above discussion concludes that the proposed changes in place of use, purpose of use, and points of withdrawal to Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C will not impair existing rights, will not be detrimental to the public welfare, and will not enhance the original certificates. The proposed changes to Ground Water Certificate No. G3-28146C should be approved, in the amount of 5,000 gallons per minute, 2,651 acre-feet per year, continuously, for industrial supply, subject to the following provisions:

"Upon completion of the project, a superceding certificate shall issue only for those quantities of water beneficially used for the purpose authorized."

"If at any time in the future the authorized purpose of use for any portion of this right is changed back to irrigation, that portion shall be subject to the appropriate designation through the Family Farm Water Act, Chapter 90.66 RCW."

"The combined withdrawal under Ground Water Certificate No.'s G3-21936C, G3-21037C, G3-21038C, G3-20139C, G3-24791C, G3-28146C and G3-28683C shall not exceed 9,671 gallons per minute, 4,864 acre-feet per year, for continuous industrial supply."

"The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required"

The water source and/or water transmission facilities are not wholly located upon the land owned by the applicant. Issuance of a permit by this Department for appropriation of the waters in question does not convey a right of access to, or other right to use, land which the applicant does not legally possess. Obtainment of such right is a private matter between applicant and owner of that land.

"This authorization to make use of public waters of the State is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise."

"All water wells constructed within the State shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

An approved measuring device shall be installed and maintained for each of the sources identified herein in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. Water use data shall be recorded weekly and shall be submitted annually to Ecology by January 31st of each calendar year.

The rule above describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements."

At a minimum, the following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit or Certificate #, source name, annual quantity used including units, maximum rate of diversion including units, and period of use. In the future, Ecology may require additional parameters to be reported or more frequent reporting.

Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information by December 31, 2002.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

"This authorization for certificate is subject to the following minimum flow provisions as specified in WAC 173-563-040 and WAC 173-563-050 and the following table. It is subject to regulation by the Department of Ecology for protection of instream resources whenever the March 1 forecast of April-September runoff at The Dalles is 60 MAF or less, and when gauged flows are predicted by the BPA 30-Day Power Operation Plan to violate the following minimum, flow provision at:

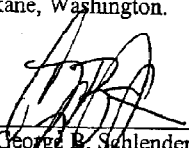
Primary Control Station McNary River Mile Minimum Average Weekly Flow Columbia River Projects (1,000 cubic feet/second)							
	CHIEF JOSEPH*	WELLS & ROCKY REACH*	ROCK ISLAND & WANAPUM*	PRIEST RAPIDS	MCNARY	JOHN DAY	THE DALLES
Jan	30	30	30	70	60	60	60
Feb	30	30	30	70	60	60	60
Mar	30	30	30	70	60	60	60
Apr 1-15	50	50	60	70	100	100	100
16-25	60	60	60	70	150	150	160
26-30	90	100	110	110	200	200	200
May	100	115	130	130	220	220	220
June 1-15	80	110	110	110	200	200	200
16-30	60	80	80	30	120	120	120
Jul 1-15	60	80	80	30	120	120	120
16-31	90	100	110	110	140	140	140
Aug	85	90	95	95	120	120	120
Sep	40	40	40	40	60	85	90
Oct 1-15	30	35	40	40	60	85	90
16-31	30	35	40	70	60	85	90
Nov	30	30	30	70	60	60	60
Dec	30	30	30	70	60	60	60

*For the reach from Grand Coulee through Wanapum, minimum average weekly flows shall be as shown above, or as necessary to maintain minimum flows (subject to low runoff adjustment) at Priest Rapids, whichever, is higher. As provided in WAC 173-563-505(1), the minimum average weekly flows set forth in this subsection are subject to a reduction of up to 25 percent during low flow years, except that in no case shall the outflow from Priest Rapids Dam be less than 36,000 cubic feet per second.

Use of water under this authorization shall be contingent upon the water right holder's utilization of up-to-date water conservation practices and maintenance of efficient water delivery systems consistent with established regulation requirements and facility capabilities.

Use of water under this authorization can be expected to be curtailed at least once in every 20 years."

DATED this 21st day of March, 2002 in Spokane, Washington.


George E. Schlender
Section Manager, Water Resources Program
Department of Ecology – Eastern Regional Office

BN:kay

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REPORT OF EXAMINATION
For State of Washington Energy Facility Site Evaluation Council (EFSEC)
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- ☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- ☒ Ground Water (Issued in accordance with the provisions of Chapter 363, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE April 19, 1973	APPLICATION NUMBER G3-21037	PERMIT NUMBER G3-21037P	CERTIFICATE NUMBER G3-21037C
NAME WALLULA GENERATION, L.L.C.			
ADDRESS (STREET) 100 Bayview Circle, Suite 500		(CITY) Newport Beach	(STATE) California
		(ZIP CODE) 92660	

PUBLIC WATERS TO BE APPROPRIATED		
SOURCE Wells (10)		
TRIBUTARY OF (IF SURFACE WATERS)		
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 800	MAXIMUM ACRE FEET PER YEAR 217
QUANTITY, TYPE OF USE, PERIOD OF USE		

LOCATION OF DIVERSION/WITHDRAWAL	
APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL #1 - 80 feet north and 80 feet east; #2 - 525 feet north and 80 feet east; #3 - 650 feet north and 80 feet east; #4 - 700 feet north and 250 feet east; #5 - 80 feet north and 280 feet east; # 1-5 ALL from the SW corner of Sec. 11	#6 - 1200 feet north and 1400 feet east; #7 - 30 feet north and 300 feet east; #8 - 1300 feet south and 1300 feet east; #9 - 2500 feet south and 500 feet east; #10 - 2350 feet south and 1820 feet east; #6-10 ALL from the center of Sec. 14

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E OR W) W.M.	W.R.L.A.	COUNTY
	11 & 14	7	31 E	32	Walla Walla

RECORDED FLATTED PROPERTY		
LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

That portion of Tracts 37 through 44, inclusively, and tracts 53 through 60, inclusively, all of the plat known as the Pasco Plats, Page 8, records of Walla Walla County, all lying in Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of Tracts 65, 80, 81, 96, 97, 112, and 113 of the plat known as Attalia Five Acre Tracts, according to the official plat thereof, lying Easterly of the Easterly right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of definite location now of record and on file in the office of the Director of Highways at Olympia Washington; and more particularly being described as that portion of the Southwest quarter of Section 34, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington; and that portion of the East half of the East half of the southeast quarter of Section 33, Township 8 North, Range 31 East, Willamette Meridian, County of Walla Walla, State of Washington, described as follows:

Commencing at a found 2-inch brass cap monument marking the southwest corner of said Section 34; thence North 88°47'18" East, coincident with the South boundary line of the Southwest quarter of said Section 34, a distance of 165.12 feet to the northeast right of way boundary line of the Washington State Department of Transportation's highway designated as Primary State Highway #3, Pasco to Attalia, as shown on that certain map of a definite location now of record and on file in the office of the Director of Highways at Olympia, Washington, and to the Point of Beginning; thence northwesterly on the following two courses coincidental with the northeasterly right of way boundary line of said State Highway #3:

1. northwesterly on a non-tangent 11,385.00-foot radius curve concave to the northeast through a central angle of 9°16'13" to the right, the long chord of said curve being North 18°05'12" West a distance of 1,840.02 feet;
2. North 13°27'06" West a distance of 899.97 feet to the north boundary line of the Northeast quarter of said Section 33;

Thence North 89°32'11" East, coincident with the north boundary line of the Northeast quarter of said Section 33, a distance of 586.12 feet to the Northwest corner of the Southwest quarter of said Section 34; thence North 88°43'39" East, coincident with the north boundary line of the Southwest quarter of said Section 34, a distance of 2708.74 feet to the northwest right of way boundary line of the Union Pacific Railroad; thence South 01°48'07" West, coincident with the northwest right of way boundary line of said Railroad, a distance of 2636.48 feet to the South boundary line of the Southwest quarter of said Section 34, said point bears South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 47.07 feet from a found 2-inch U.S. Bureau of Reclamation brass cap marking the Southeast corner of the Southwest quarter of said Section 34; thence South 88°47'18" West, coincident with the south boundary line of the Southwest quarter of said Section 34, a distance of 2431.87 feet to the Point of Beginning;

Containing 175.529 Acres, more or less.

DESCRIPTION OF PROPOSED WORKS		
DEVELOPMENT SCHEDULE		
BEGIN PROJECT BY THIS DATE Started	COMPLETE PROJECT BY THIS DATE October 1, 2004	WATER PUT TO FULL USE BY THIS DATE October 1, 2005

REPORT

BACKGROUND

Purpose

Wallula Generation, L.L.C. ("WallulaGen") is proposing to construct and operate a natural gas combined cycle electrical generating facility of approximately 1300 MW at Wallula, Washington. As part of the development of this project, WallulaGen is seeking to transfer water rights from other uses for the purpose of operating the proposed power plant. The proposed changes include changing the points of withdrawal (consolidation of the existing wells), changing the place of use, and changing the purpose of use to the following water rights: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C. The purpose of this report is to review the proposed changes to these, and to provide a tentative determination as to the extent of water available for such transfer.

Expedited Processing

In August of 2001, WallulaGen entered into a contract with Ecology to pay \$344,200 for the purchase of water rights on the lower Walla Walla River. This purchase completed a contract Ecology had entered into earlier with a private landowner to purchase water rights appurtenant to 659 acres located along the lower reach of the Walla Walla River. The water rights purchased are in the process of being placed in the Trust Water Right Program for the purpose of instream flow. The WallulaGen portion of this purchase will result in instream flow augmentation to the Walla Walla River in the amount of approximately 2.8 cubic feet per second from April 1 to July 1.

As part of this contract with WallulaGen, Ecology agreed to provide a tentative determination as to the extent of water available for the proposed transfer, and to write a report outlining those findings. It is the intent of WallulaGen to submit said report to Energy Facility Siting Evaluation Committee ("EFSEC") as part of their effort to license the proposed power plant. (Under Washington State law, EFSEC is responsible for siting and licensing the construction and operation of major energy facilities in Washington State, including this project). Due to the fact WallulaGen's purchase is considered by Ecology to be a significant environmental benefit, Ecology agreed to complete this report on an expedited basis - no later than December 31, 2001, if possible.

INVESTIGATION

Project Description

The proposed project site is located primarily within the SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M. This site is 3.5 miles north of Wallula, Washington, due west of the I.B.P. Inc. processing plant, and on the east side of SR 12. The 183 acre site is zoned Heavy Industrial and is presently in agricultural use. WallulaGen has indicated their desire to change the place of use, purpose of use, add points of withdrawal (consolidation), and season of use to the following water rights to allow for their use in the operation of the proposed power plant: Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C.

Existing Water Rights/Claims

There are two (2) water rights appurtenant the proposed WallulaGen project site: Ground Water Permit No. G3-29640P and Surface Water Right No. 10703.

Ground Water Permit No. G3-29640P

Priority date:	February 16, 1994
Qi (instantaneous):	1,200 gallons per minute
Qa (annual):	1,800 acre-feet per year
Purpose:	Industrial use
Season:	Continuous
Source:	A well (basalt aquifer)
Point of withdrawal:	SE¼SW¼ of Sec. 34, T. 8 N., R. 31 E.W.M.
Place of use:	Within SE¼ of Sec. 33 and W¼ of Sec. 34, T. 8 N., R. 31 E.W.M.

This permit issued to the Port of Walla Walla on February 12, 1996. No beneficial use of water has been made under this permit to date, although the subject well has been completed. This permit is in good standing, and WallulaGen has indicated their intent to use water from this well to the full extent possible. In their EFSEC application, they indicate that this permit will be the initial source of water for the plant, with water needs over and above those allocated coming from other sources - primarily the shallow aquifer wells authorized through the water rights proposed for change herein.

Report Continued

There is a change application pending with Ecology for this Permit, filed by the Port of Walla Walla in December of 1996. This application requests authority to add an additional well to the one authorized, to serve as an emergency back-up source to the primary well.

Surface Water Right No. 10703

Priority date: October 27, 1958
Qi (instantaneous): 80 cubic feet per second
Qa (annual): 23,121 acre-feet per year
Purpose: Irrigation of 3,303 acres
Season: March 15 to October 31
Source: Columbia River
Point of withdrawal: NE¼SE¼ of Sec. 20, T. 8 N., R. 31 E.W.M.

This water right was issued to the U.S. Bureau of Reclamation, and is administered by the South Columbia Basin Irrigation District. This right has been used on the subject property in the past for irrigation of orchard and grain crops. The applicant has expressed the intent to continue to use at least a portion of their allocation of Surface Water Right No. 10703 for irrigation purposes. Any use of water under Certificate No. 10703 will be independent from the use of water proposed herein for industrial purposes.

Evaluation of Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C

In Okanogan Wilderness League v. Town of Twisp, 133 Wn.2d 769, 947 P.2d 732 (1997), the Supreme Court held that applications for change of water rights may be granted only to the extent the water has been historically put to beneficial use, as beneficial use determines the measure of a water right. The Court also held that (1) the existence and quantification of a water right must first be determined, and (2) that it then must be determined whether or not any perfected water right has been lost for nonuse due to statutory relinquishment or common law abandonment before the Department can approve a change or transfer. While Ecology is not considering a formal application for change in development of this report, the evaluation of these rights will be consistent with this court decision.

Below is a summary of the water rights proposed for change/transfer:

Certificate No.	Well No.	Priority Date	Qi (gpm)	Qa (afy)	Acres	Season of Use
G3-28146C ^{1,2}	1-5	2/27/86	5,000	2,790	600	3/1 - 11/30
G3-28683C ^{1,2}	1-5	11/2/89	2,500	883	190	3/1 - 11/30
G3-21038C	6	4/19/73	560	279	60	1/1 - 12/31
G3-24791C ³	7	2/18/76	650	623	124	1/1 - 12/31
G3-21037C	8	4/19/73	800	372	80	1/1 - 12/31
G3-21039C	9	4/19/73	1300	744	160	1/1 - 12/31
G3-21936C	10	10/12/73	530	293	63	1/1 - 12/31

¹Subject to the minimum flows set forth in the Columbia River Instream Protection Program (WAC 173-563-040 and WAC 173-563-050)

²Family Farm Development Certificate

³Of these totals, 340 gpm and 158 ac/ft for irrigation of 34 acres are supplemental to existing water rights (G3-21037C)

1. Historical Beneficial Use

Beneficial use encompasses two principal elements of a water right: First it refers to the purposes for which water may be used; and second, beneficial use determines the measure of a water right. The measure of a water right refers to the quantities of water actually used, without waste, within the authorized place of use for the purpose(s) authorized. The measure is defined in terms of both annual quantity and instantaneous quantity. Prior to recommending any change to the subject water rights, it is necessary to determine the extent of beneficial use of water under these rights.

a. Purpose

The use authorized under Ground Water Certificate No.'s G3-21037C, G3-21038C, G3-20139C, G3-21936C, G3-24791C, G3-28146C and G3-28683C, Irrigation is explicitly identified in statute as being a beneficial use (RCW 90.54.020(1)).

b. Measure

In order to determine the amount of water available for the requested change, a determination must be made as to the quantities of water beneficially used to irrigate crops on the subject property. Alan Kottwitz, Irrigation Manager for Boise Cascade Fiber Farms, provided meter data for each of the past seven years for all of the wells. These data are summarized below (Note: Water under Certificate No.'s G3-28146C and G3-28683C is withdrawn from five (5) integrated wells; likewise, water withdrawn from the two (2) wells authorized for use under

Certificate No.'s G3-21039C and G3-21936C are also integrated. The use of water under these rights is summarized in cumulative form.)

Water Right Nos.	Well No.	Water Right (Ac/ft/yr)	Metered Use - 1995	Metered Use - 1996	Metered Use - 1997	Metered Use - 1998	Metered Use - 1999	Metered Use - 2000	Metered Use - 2001
G3-28146; G3-28683 G3-21038	1 - 5	3,673	3,038	N/A	2,489	3,073	3,302	3,156	3,163
G3-24791	6	279	142	N/A	170	204	225	87	237
G3-21037	7	465	176	N/A	241	313	316	116	290
G3-21039;	8	372	89	N/A	111	121	136	56	160
G3-21936	9 - 10	1073	575	N/A	803	1065	1070	968	1105

*Quantity represents primary right only

Note: shaded areas represent the maximum year of metered use for each well respectively during the xix (6) years of measurement provided.

It is noted that the instantaneous and annual quantities withdrawn in 2001 under Certificate No.'s G3-21039 and G3-21936C exceed those quantities authorized. The acres irrigated under these rights also exceed what is authorized; however, these additional acres are within the place of use of Certificate No. G3-21037C. When taken together, the quantities of water withdrawn and number of acres irrigated do not exceed those authorized through a combination of the three (3) certificates. In essence, Well No.'s 9 and 10 were added as points of withdrawal to Certificate No. G3-21037C without authorization. All three wells withdraw water from the same aquifer, and no real expansion of the rights in total quantities or acres occurred through this "defector" change. This being the case, consideration can and will be given to the full quantities withdrawn under the various rights. The total gross quantity of water available for change is (3,302+237+316+160+1105) 5120 acre-feet.

One of the proposed changes to the subject rights is in purpose of use, from irrigation to industrial. A component of the irrigation use, return flows to the Columbia River in the form of deep percolation and surface runoff, would be eliminated if such a change were approved. In order to minimize any potential impairment to the Columbia River by virtue of this change, the estimated return flows should be subtracted from the total amount withdrawn.

Irrigation of hybrid poplars through the subject water rights occurs by means of drip irrigation system. Boise Cascade utilizes 9 neutron probes installed to a depth of 5 feet. The probes were reported to have been read weekly from mid-March to mid-October, with irrigation being managed according to the soil moisture readings. A well-managed drip system can run at a 90% application efficiency, with the 10% loss occurring through a variety of factors including evaporation, deep percolation, and surface runoff. A review of pertinent material in the Washington State Irrigation Guide, and discussions with Brian Leib, WSU Extension Irrigation Specialist, confirm that half of the efficiency loss, or 5%, is a reasonable estimate for deep percolation return flows for the irrigation system described.

A 5% return flow component would equate to 256 acre-ft. The resulting net annual quantity of water available for consideration for transfer is 4,864 acre-feet. The maximum projected annual water use at the WallulaGen plant is expected to be 6,591 acre-feet per year.

Boise Cascade reported cumulative instantaneous withdrawal rates totaling 9,735 gallons per minute from the subject wells. Due to a portion of Certificate No. G3-24791C being supplemental, a total of 9,671 gallons per minute is available for transfer. The total currently authorized is 11,000 gallons per minute. This compares with the projected maximum instantaneous water demand for the project of 7,901 gallons per minute reported in the WallulaGen EFSEC application

c. Waste

As described above, Boise Cascade has employed a drip irrigation system in utilizing water under the subject rights. Assuming that the drip system was operated in a well-managed manner, this would be a relatively efficient irrigation application method, which would minimize any waste. Operational losses are part of any irrigation system; the losses estimated herein are within what would be necessary and expected.

Hybrid poplars are known to have transpiration rates that are among the highest of temperate deciduous trees. Generally, research suggests that hybrid poplars will "use" as much water as is made available to them; that is, if potential evapotranspiration of a certain quantity exists at a site and that quantity of water is made available to the tree, it will "use" that quantity. While there is no published crop irrigation requirement for hybrid poplars, a review of pertinent literature indicates that single, mature hybrid poplars trees are capable of consuming 7 acre-feet or more of water per year. Ideally the producer would attempt to match applied water to that used by the poplar stand for optimal production. The technology to assess the water use characteristics of a stand is generally not available, and is made more difficult by the fact that the water use will change considerably from early in the stand rotation to later years.